

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 1 (currently amended): A method of determining whether a virtual address corresponds to
5 a physical address in a translation lookaside buffer (TLB), the virtual address comprising
a plurality of bits, the translation lookaside buffer (TLB) comprising a plurality of tag
addresses and page types, and the physical addresses corresponding to each tag address,
the method comprising:
- (a) receiving the virtual address;
 - 10 (b) setting the page type of the virtual address according to the rank of the page
types;
 - (c) fetching index bits and a tag compared address from the page type;
 - (d) comparing the page type of the virtual address in step (b) and the tag compared
address in step (c) with the page types and the tag addresses in the TLB; and
 - 15 (e) ~~determining~~ adjusting the rank of the page type if the page type of the virtual
address in step (b) and the tag compared bits in step (c) correspond with a page
type and a tag address in the TLB.
- 2 (original): The method of claim 1 further comprising searching for a page type in the
20 TLB corresponding to the set page type of the virtual address and an index address for
comparing the page type with the tag compared address according to the index bits of the
virtual address.
- 3 (currently amended): The method of claim 1 wherein ~~determining~~ adjusting the rank of
25 the page type in step (e) comprises raising the rank of the page type of the virtual address
if the page type of the virtual address set in step (b) corresponds with a page type in the
TLB, if the tag compared address in step (c) corresponds with the tag address in the TLB,

and if the rank of the page type of the virtual address in step (b) is not the highest.

4 (original): The method of claim 3 wherein the rank of the page type of the virtual
address is raised by one level if the page type of the virtual address set in step (b)
5 corresponds with a page type in the TLB, if the tag compared address in step (c)
corresponds with the tag address in the TLB, and if the rank of the page type of the virtual
address in step (b) is not the highest.

5 (currently amended): The method of claim 1 wherein ~~determining~~ adjusting the rank of
10 the page type in step (e) comprises following steps:

- (i) calculating a number of times in which the set page type of the virtual address in step
(b) corresponds with a page type in the TLB; and
- (ii) raising the rank of the page type according to the calculated number.

15 6 (currently amended): The method of claim 1 wherein ~~determining~~ adjusting the rank of
page type in step (e) utilizes a sorting method of a 2-bit counter.

7 (original): The method of claim 1 wherein setting the page type of the virtual address
according to the rank of the page type in step (b) comprises setting the page type of the
20 virtual address to be a page type with higher rank.

8 (original): A determining device for determining whether a virtual address corresponds
to a physical address in a TLB, comprising:

a mask selecting module used for receiving the virtual address and outputting a part of
25 the bits of the virtual address and a page type signal according to a rank of a page
type;

a translation lookaside module comprising:

a TLB used for storing a plurality of index addresses and a plurality of page types;

a tag address comparing module used for checking whether the part of bits
outputted by the mask selecting module corresponds with an index stored in the
TLB; and

5 a page type comparing module used for checking whether the page type signal
outputted by the mask selecting module corresponds with a page type stored in
the TLB; and

a rank generating module used for generating the ranks of the plurality of the page
types in the TLB according to the checking result of the page type comparing
module.

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9 (original): The determining device of claim 8 wherein the rank generating module sets
the ranks of the page types in the TLB according to the number of times the page type
signal corresponds to the one of the page types in the TLB.

15 10 (original): The determining device of claim 8 wherein the rank generating module is
used for raising the rank of the page types in the TLB if the page type signal corresponds
to the one of the page types in the TLB and if the corresponding rank of the page type is
not the highest.

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